

Application No. 10/605,408
Technology Center 2813
Submission Accompanying RCE under 37 CFR §1.114

REMARKS

Please enter this Submission in response to the Request for
Continued Examination filed herewith under 37 CFR §1.114.

In an Office Action dated August 8, 2005 (Paper No. 080505), the Examiner repeated rejections of all claims pending in the application. More particularly, claims 1-21 were rejected under 35 USC §102(e) as being anticipated by U.S. Patent Application Publication No. 2005/0003599 to Yeo et al. (Yeo), claims 1, 6, and 13-16 were rejected under 35 USC §102(e) as being anticipated by U.S. Patent Application Publication No. 2004/0142541 to Cohen et al. (Cohen), and claims 22 and 23 were rejected under 35 USC §103 as being unpatentable over Yeo in view of U.S. Patent No. 6,391,695 to Yu. In response, Applicant has:

amended independent claim 1 to require the silicon layer (12) is strained during the process of its formation;

amended independent claims 1 and 13 to specify that the step of bonding the multilayer structure (18) to the substrate (20) is one of the alternative bonding techniques recited in their respective dependent claims 6 and 15, 7 and 16, and 8 and 17;

amended dependent claims 6-8 and 15-17 for consistency with their

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respective parent claims 1 and 13;

amended dependent claims 5 and 14 to require that the removal step comprises preferentially etching the strain-inducing layer (22) with hydrogen peroxide, hydrofluoric acid, and acetic acid (which finds support in paragraph [0014] of the specification); and

amended the claims to remove the reference numbers.

Favorable reconsideration and allowance of claims 1-23 are respectfully requested in view of the following remarks.

Rejection under 35 USC §102 based on Yeo

Yeo discloses forming a strained silicon layer 3 on a SiGe layer 2 to form a multilayer structure 100, bonding the silicon layer 3 of the multilayer structure 100 to an insulating layer 5 on a second multilayer structure 200 to form a third multilayer structure 300 in which the strained silicon layer 3 is between the insulating layer 5 and the SiGe layer 2, and then separating the strained silicon layer 3 from the SiGe layer 2 by cleaving. Yeo does not disclose or suggest forming the first and second multilayer structures 100 and 200 as recited in Applicant's independent claims 1 and 13 and dependent claims 6-8 and 15-17, namely:

(A) forming a second insulating layer on the strained silicon layer 3 of

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first multilayer structure 100 and then bonding the second insulating layer to the insulating layer 5 of the second multilayer structure 200; or

(B) forming the insulating layer 5 on the strained silicon layer 3 of the first multilayer structure 100 and then bonding the insulating layer to the substrate 1 of the second multilayer structure 200; or

(C) forming the insulating layer 5 on the strained silicon layer 3 of the first multilayer structure 100, then forming a semiconductor layer on the insulating layer 5, and then bonding the semiconductor layer to the semiconductor layer 1 of the second multilayer structure 200.

In view of the above, Applicant believes that Yeo does not anticipate independent claims 1 or 13 nor any of their dependent claims under the test for anticipation set forth at MPEP §2131, and therefore respectfully requests withdrawal of the rejection under 35 USC §102 based on Yeo.

Rejection under 35 USC §102 based on Cohen

Cohen discloses bonding a silicon layer 100 of a first multilayer structure (Figure 1) to a SiGe layer 110 to form a second multilayer structure (Figure 2), and then treating the multilayer structure (Figures 3-5) to transform the silicon layer 100 into a strained silicon layer 100' (Figure 6). Therefore, Cohen does not disclose or suggest "forming" (Applicant's claim 1) or

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"epitaxially growing" (Applicant's claim 13) the silicon layer 100 on the SiGe layer 110 so that strain is induced in the silicon layer 100 as deposited. In addition, Cohen does not disclose or suggest forming the multilayer structure with the bonding procedures recited in Applicant's independent claims 1 and 13 and dependent claims 6-8 and 15-17, namely:

- (A) bonding two insulating layers together to form the multilayer structure of Figure 2; or
- (B) bonding an insulating layer to a substrate to form the multilayer structure of Figure 2; or
- (C) bonding two semiconductor layers together to form the multilayer structure of Figure 2.

In view of the above, Applicant believes that Cohen does not anticipate independent claims 1 or 13 nor any of their dependent claims under the test for anticipation set forth at MPEP §2131, and therefore respectfully requests withdrawal of the rejection under 35 USC §102 based on Cohen.

Rejection under 35 USC §103 based on Yeo and Yu

Yu does not compensate for the differences described under the §102 rejection based on Yeo as existing between Applicant's claimed invention and that of Yeo. Therefore, Applicant respectfully believes that the combination

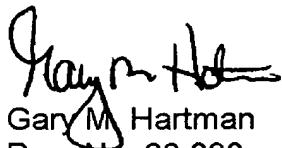
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of Yeo and Yu does not obviate independent claims 1 or 13 nor any of their dependent claims, and therefore respectfully requests withdrawal of the rejection under 35 USC §103.

Closing

Should the Examiner have any questions with respect to any matter now of record, Applicant's representative may be reached at (219) 462-4999.

Respectfully submitted,

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